

IN THE CLAIMS

The claims are amended as follows:

1. (previously presented) A threaded fastener comprising:

a head;

a tip; and

a threaded shank extending between the head and the tip, the threaded shank having a helical lead formed thereon, the lead including a plurality of bosses therealong, successive bosses being separated from one another by recessed bases, each boss extending radially beyond adjacent bases and presenting a respective profile including a lead-in profile in a direction towards the tip, a respective lead-out profile in a direction towards the head and a central section of substantially uniform radial dimension, wherein the respective profiles comprise a crest profile defining a single continuous apex.

2. (original) The fastener of claim 1, wherein the respective profiles of at least two bosses differ from one another.

3. (original) The fastener of claim 2, wherein the respective lead-in profiles of the at least two bosses differ from one another.

4. (original) The fastener of claim 2, wherein the respective lead-out profiles of the at least two bosses differ from one another.

5. (original) The fastener of claim 2, wherein the respective profiles differ from one another in length.

6. (original) The fastener of claim 1, wherein at least two bases differ from one another.

7. (original) The fastener of claim 6, wherein the at least two bases differ from one another in length.

8. (original) The fastener of claim 1, wherein for at least one of the bosses the lead-in profile differs from the lead-out profile.

9. (currently amended) A threaded fastener comprising:

a head;

a tip;

a threaded shank extending between the head and the tip;

a first helical lead formed on the shank and including a plurality of first bosses therealong, successive first bosses being separated from one another by first bases, each first boss extending radially beyond adjacent first bases and presenting a respective profile including a lead-in profile in a direction towards the tip, a respective lead-out profile in a direction towards the head; and

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(canceled)*
a second helical lead including a plurality of second bosses therealong, successive second bosses being separated from one another by second bases, each second boss extending radially beyond adjacent second bases and presenting a respective profile including a lead-in profile in a direction towards the tip, a respective lead-out profile in a direction towards the head;

wherein the profiles of the first and second leads are configured to provide a substantially constant insertion torque, and wherein each of the respective profiles comprise a crest profile defining a single continuous apex, and

wherein profiles of at least two bosses of the first lead differ from one another and profiles of at least two bosses of the second lead differ from one another.

10. (canceled).

11. (currently amended) The fastener of claim 10, wherein the respective lead-in profiles of the at least two bosses of the first and second lead differ from one another.

12. (currently amended) The fastener of claim 10, wherein the respective lead-out profiles of the at least two bosses of the first and second lead differ from one another.

13. (currently amended) The fastener of claim 10, wherein lead-in profiles of the first lead and lead-out profiles of the second lead are disposed at corresponding locations along the shank between the tip and the head.

14. (original) The fastener of claim 13, wherein lead-out profiles of the first lead and lead-in profiles of the second lead are disposed at corresponding locations along the shank between the tip and the head.

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15. (currently amended) The fastener of claim 10, wherein the first bosses and the second bases are disposed at corresponding locations along the shank between the tip and the head.

16. (original) The fastener of claim 15, wherein the second bosses and the first bases are disposed at corresponding locations along the shank between the tip and the head.

17. (canceled).

18. (currently amended) A double-lead threaded fastener comprising:
a tip;
a head;

a shank extending between the tip and the head;
a first helical lead disposed about the shank and including first bosses separated by first bases, the first bosses extending radially beyond the first bases; and
a second helical lead disposed about the shank and including second bosses separated by second bases, the second bases extending radially beyond the second bases;
wherein the first bosses and the second bases are disposed along the shank at generally corresponding locations, and the second bosses and the first bases are disposed along the shank at generally corresponding locations, and wherein the first and second bosses and the first and second bases are disposed along the shank to provide a substantially constant insertion torque, and wherein the bosses and bases of each of the respective leads comprise a crest profile defining a single continuous apex, and wherein lead-in profiles of at least two of the bosses of the first and the second leads are different from one another.

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19. (previously presented) The fastener of claim 18, wherein each of the first and second bosses includes a respective lead-in profile and lead-out profile, and wherein the lead-in profiles of the first bosses and the lead-out profiles of the second bosses are disposed at generally corresponding locations along the shank, and the lead-out profiles of the first bosses and the lead-in profiles of the second bosses are disposed at generally corresponding locations along the shank.

20. (canceled).

21. (previously presented) The fastener of claim 19, wherein lead-out profiles of at least two of the bosses of the first and second leads are different from one another.

22. (canceled).

23. (previously presented) The fastener of claim 19, wherein the lead-in profiles of the bosses of the first and second leads are inclined less than the lead-out profiles for the same bosses.

24. (previously presented) The fastener of claim 18, wherein the first lead is identical to the second lead.

25. (currently amended) A double-lead threaded fastener comprising:

a tip;

a head;

a shank extending between the tip and the head;

a first helical lead disposed about the shank and including first bosses separated by first bases, the first bosses extending radially beyond the first bases and having a central section of substantially uniform radial dimension; and

a second helical lead identical to the first helical lead, the second helical lead being disposed about the shank and including second bosses separated by second bases, the second bases extending radially beyond the second bases and having a central section of substantially uniform radial dimension;

wherein the respective first and second bosses are displaced from one another by 180 degrees at generally corresponding locations along the shank, and wherein the first and second bosses and the first and second bases are disposed along the shank to provide a substantially constant insertion torque, and wherein the bosses and bases of each of the respective leads comprise a crest profile defining a single continuous apex.

26. (previously presented) The fastener of claim 25, wherein each of the first and second bosses includes a respective lead-in profile and lead-out profile, and wherein the lead-in profiles of the first bosses and the lead-out profiles of the second bosses are disposed

at generally corresponding locations along the shank, and the lead-out profiles of the first bosses and the lead-in profiles of the second bosses are disposed at generally corresponding locations along the shank.

27. (previously presented) The fastener of claim 26, wherein the lead-in profiles of at least two of the bosses of the first and the second leads are different from one another.

28. (previously presented) The fastener of claim 26, wherein lead-out profiles of at least two of the bosses of the first and second leads are different from one another.

29. (canceled).

30. (previously presented) The fastener of claim 26, wherein the lead-in profiles of the bosses of the first and second leads are inclined less than the lead-out profiles for the same bosses.

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(canceled) 31. (previously presented) The fastener of claim 25, wherein profiles of bosses of the first and the second leads vary along the shank from the tip to the head.

32. (currently amended) A double-lead threaded fastener comprising:
a tip;
a head;
a shank extending between the tip and the head;
a first helical lead disposed about the shank and including first bosses separated by first bases, the first bosses extending radially beyond the first bases and less than a 360 degrees around the shank and having a central section of substantially uniform radial dimension; and

a second helical lead identical to the first helical lead, the second helical lead being disposed about the shank and including second bosses separated by second bases, the second bases extending radially beyond the second bases and less than 360 degrees around the shank and having a central section of substantially uniform radial dimension;

wherein the respective first and second bosses are displaced from one another by 180 degrees at generally corresponding locations along the shank, and wherein the first and second bosses and the first and second bases are disposed along the shank to provide a substantially constant insertion torque, and wherein the bosses and bases of each of the respective leads comprise a crest profile defining a single continuous apex.

33. (previously presented) The fastener of claim 32, wherein each of the first and second bosses includes a respective lead-in profile and lead-out profile, and wherein the lead-in profiles of the first bosses and the lead-out profiles of the second bosses are disposed at generally corresponding locations along the shank, and the lead-out profiles of the first bosses and the lead-in profiles of the second bosses are disposed at generally corresponding locations along the shank.

34. (previously presented) The fastener of claim 33, wherein the lead-in profiles of at least two of the bosses of the first and the second leads are different from one another.

35. (previously presented) The fastener of claim 33, wherein lead-out profiles of at least two of the bosses of the first and second leads are different from one another.

36. (canceled).

37. (previously presented) The fastener of claim 33, wherein the lead-in profiles of the bosses of the first and second leads are inclined less than the lead-out profiles for the same bosses.

38. (previously presented) The fastener of claim 32, wherein profiles of bosses of the first and the second leads vary along the shank from the tip to the head.

39. (previously presented) The fastener of claim 32, wherein each of the first and second bosses extends less than 180 degrees around the shank.

40. (previously presented) The fastener of claim 39, wherein each of the first and second bosses extends less than 90 degrees around the shank.

41. – 51. (canceled).

52. (previously presented) A threaded fastener comprising:

a head;

a tip; and

a threaded shank extending between the head and the tip, the threaded shank having a helical lead formed thereon, the lead including a plurality of bosses therealong, successive bosses being separated from one another by recessed bases, each boss extending radially beyond adjacent bases and presenting a respective profile including a lead-in profile in a direction towards the tip, a respective lead-out profile in a direction towards the head and a central section of substantially uniform radial dimension, wherein a ratio of removal torque to insertion torque is greater than 0.8, and wherein the bosses and bases of the lead comprise a crest profile defining a single continuous apex.

53. (previously presented) The threaded fastener of claim 52, wherein the ratio is greater than 0.9.

54. (previously presented) The threaded fastener of claim 53, wherein the ratio is greater than 1.0

55. (previously presented) The threaded fastener of claim 54, wherein the ratio is greater than 1.1.

56. (previously presented) The threaded fastener of claim 52, wherein the fastener comprises first and second leads about a shank, each lead having a series of bosses, lead-in profiles and lead-out profiles of the bosses differing from one another to provide the ratio.

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57. (previously presented) The threaded fastener of claim 56, wherein the first and second leads are identical to one another.

58. (previously presented) The threaded fastener of claim 56, wherein crests of the lead-in profiles are inclined at approximately 15 degrees from the thread root, and crests of the lead-out profiles are inclined at approximately 45 degrees from the thread root.

59. - 62. (canceled).

63. (previously presented) The fastener of claim 1, wherein each recessed base includes a central section of substantially uniform radial dimension.

64. (previously presented) A threaded fastener comprising:

a head;

a tip; and

a threaded shank extending between the head and the tip, the threaded shank having a helical lead formed thereon, the lead including a plurality of bosses therealong, successive bosses being separated from one another by recessed bases, each recessed base including a central section of substantially uniform radial dimension, and each boss extending radially beyond adjacent bases and presenting a respective profile including a lead-in profile in a direction towards the tip, a respective lead-out profile in a direction towards the head and a central section of substantially uniform radial dimension, wherein the respective profiles comprise a crest profile defining a single continuous apex.

65. (new) A threaded fastener comprising:

a head;

a tip; and

a threaded shank extending between the head and the tip, the threaded shank having a helical lead formed thereon, the lead including a plurality of bosses therealong, successive bosses being separated from one another by recessed bases, each boss extending radially beyond adjacent bases and presenting a respective profile including a lead-in profile in a direction towards the tip, a respective lead-out profile in a direction towards the head and a central section of substantially uniform radial dimension, wherein the respective profiles comprise a crest profile defining a single continuous apex; and

wherein the lead-in profile of at least one of the bosses is different from the lead-out profile of the same boss.
